IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: US application Ser No 10/521,804

Inventor: Rozendaal, et al.

Examiner: McGowan, Jamie Louise

GAU: 3671

DECLARATION UNDER 37 CFR 1.132 OF JAMES F. BOAK

I, James F. Boak, being duly warned of the consequences of making willing false statements and the like, do depose and state as follows:

1. My name is James F. Boak, and I reside in Wheatley, Ontario, Canada.

2. I am Regional Sales Manager for Salford Farm Machinery Ltd, a position that I have held since 2001.

3. I hold a diploma in Agricultural Production and Management from Ridgetown College, now the University of Guelph, Ontario, Canada.

4. I am a co-inventor, with Jacobus Rozendaal and three others, of the conservation tillage implement that is shown and described in US patent application Ser No 10/521,804 ("the '804 application"), which claims priority to a US provisional patent application Ser No 60/451,666 ("the '666 provisional") that was filed on 5 March 2003.

5. As a co-inventor of the invention described and claimed in the '804 application, I am familiar with the invention and with the understanding of the device as it has developed since the filing date of the '804 application and the '666 provisional.

6. An embodiment of the invention described and claimed in the '804 application is sold by Salford Farm Machinery under the name RTS (Residue Tillage Specialist).

7. As I understand it, the US Patent Office is stating that replacing the S-tines of a conventional field cultivator, such as disclosed in US Patent 6,896,068 to Dietrich ("Dietrich '068") with coulter wheels, such as shown in US Patent 6,698,525 to McFarlane ("McFarlane '525"), would be an obvious combination that would be known to one of ordinary skill.

8. My response to the US Patent Office position of paragraph 6 is that such a combination is known and provided by the Salford 499 and 699 disc cultivator, a photo of which is attached as Figure 1. The RTS was invented in response to deficiencies in conventional tillage tools, such as the 499 and 699 disc cultivators, for residue management and minimum tillage applications.

9. My further response to US Patent Office position of paragraph 6 is that a main deficiency of the illustrated 499 and 699 tools for minimum tillage seedbed preparation has to do with the seed bed formed, as these tools will work the soil too deeply and form a secondary density layer in the seed germination zone, which alters root growth and development. A secondary density layer is not formed by the RTS.

10. I have also observed that depth control of the RTS is very accurate. Accurate depth control allows shallow tillage for seed bed preparation down to as little as 1" below the surface. This means that the soil is tilled only above the planting depth, which counter-intuitively leads to improved root development and higher overall crop yields.

11. An unexpected advantage or result of the RTS is reduced plugging of the individual coulter wheels, as compared with gang shaft mounted coulter wheels, as the individual mount allows the coulter wheels to be spread out. Mounting the coulter wheels on 4 - 6 frame bars allows for unlimited passage of plant and crop residues. It has been my experience and observation that gang shaft mounted coulter wheels are prone to plugging with crop residue, cover crop materials, weeds, and wet soil. This plugging occurs between the coulter wheels of a gang mounted system, particularly when operated in wet soil or cover crop applications that normally have a large amount of crop residue.

12. A further surprising result is the total management of cover crops from seeding to the conditioning surface decomposition of cover crop materials, which is shown in Figure 2 attached hereto. In that figure, the RTS was the only tool that could manage this crop, which was 7 ft tall and had a dry matter yield of 40,000 lbs per acre. All conventional tillage tools and stalk shredders failed due to plugging.

13. A further surprising result came from operations in rice fields where the RTS incorporated the rice straw without plugging while the water was still in the paddy, enabling double cropping of rice in the same season because it reduced the turn around time by 3 weeks.

14. The coulter wheels shown by McFarlane '525 cannot be disassembled from the gang and attached to the shanks shown by Dietrich '068. To do so would require the addition of a hub, stub axle, or some similar component not described by either reference. The mounting system used to mount a gang shaft requires it to be suspended in at least two places from the frame. A gang that is mounted in two places is not, in my opinion, "individually mounted".

15. A gang mounted system, as would result by merely combining the teachings of Dietrich '068 with McFarlane '525, would be unable to pivot around or flex over an obstacle. Conventional mounting systems used for coulter gangs are normally only able to move approximately 1.5" upward, which limits the amount of available protection against damage caused by contact with rocks or other immovable objects buried in the soil. Mounting in two places, as required for gang shafts, would not allow the gang to pivot and would take away many of the advantages of the RTS in terms of pivoting and flexibility around and over obstacles.

16. Conventional mounting systems used for coulter gangs typically limit speeds to 6 - 7 mph to be assured of minimal damage or failure. On information and belief, the commercially available McFarlane '525 device is recommended for high speeds but is prone to failure in stony soils at recommended speeds because the gang is unable to pivot away from obstacles and the upward travel is typically limited to 1.5" of deflection by the conventional mounting system.

17. The ability of the coulter wheels in the RTS to pivot around an obstacle and to flex 6 inches to travel up and over an obstacle makes it possible to contact obstacles in the field at higher speeds without fear of damage or failure.

18. Higher operating speed is directly related to energy savings as well as reduced capital and labor costs. One of the driving purposes behind the RTS invention was for the reason that it was possible to operate at speeds in the 8 to 12 miles per hour range without damage to the machine or its components. No other tillage machine that I know of is capable of maintaining its performance at speeds in this range.

19. I have also observed that, unlike all other tools in this class, the individually mounted coulter wheels of the RTS pivot and flex to allow the machine to follow contours without loss of horsepower or damage to the machine, which is valuable to farms that must plant in terraces and strips to minimize or protect against erosion. Because the wheels are individually mounted and can flex, unlike the gang mounted disc coulter, the device can be configured to strip till on terraces, contours and rolling topography which can not be accomplished with any other strip till designs without creating berms or causing excessive wear on parts and components of the machine. In addition, due to the individual mounting, depth control can be maintained across the width of the RTS, even when pulling it along ruts or ridges.

20. In terms of sales, the RTS is now the largest selling product in the line, exceeding the combined sales of 499 and 699 disc cultivators by more than 10 times. The product has been enthusiastically embraced by farmers and has been very successful in the marketplace. Most farmers state that their reason for purchasing an RTS has to do with its reputation for low maintenance and the flexibility of being able to adjust the individually mounted coulter wheels.

Signed at Wheatley, Ontario, Canada, this 29th day of February, 2008.

James F. Boak

Witness: Cheryl L. Pace

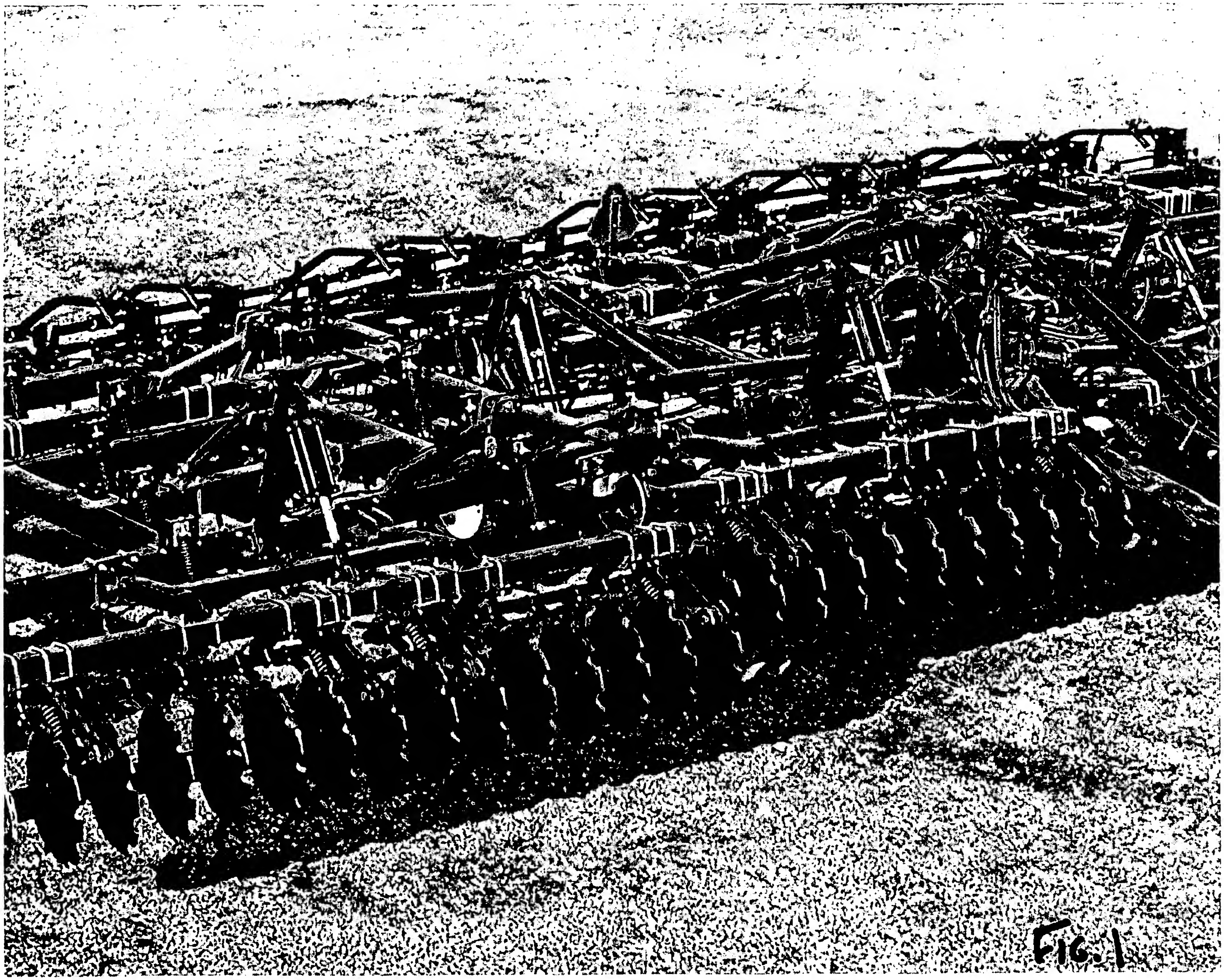

FIG. 1